

# Photometric redshift estimation from galaxy images with machine learning

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We will describe a project to test and validate several machine learning techniques to estimate photometric redshift using multi-wavelength galaxy images. This project consists of machine network insertion in RAIL, testing and validation. We will validate and test on both field and cluster galaxies, and for individual and blended galaxies. Our results will be published in several papers lead by the teams that are developing and testing networks, and we will provide catalogs to the photoz collaboration for comparison with other methods. At APC, we tested a simple CNN, Resnet, DeepNet, and the Pasquet et al. (2019) inception network, which is public and available to the community. This last network has the lower scatter, less outliers and less bias in our preliminary tests. From our preliminary tests it is very efficient in recovering SDSS galaxy photometric redshifts, and it will be the first network that we will insert in RAIL. We will describe our first tests and future activities.

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